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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,600	11/21/2003	Kai Mustonen	60279.00067	8208
32294 7590 05/28/2010 SQUIRE, SANDERS & DEMPSEY L.L.P. 8000 TOWERS CRESCENT DRIVE 14TH FLOOR VIENNA, VA 22182-6212				
EXAMINER PATEL, CHANDRAHAS B				
ART UNIT 2464		PAPER NUMBER		
NOTIFICATION DATE 05/28/2010		DELIVERY MODE ELECTRONIC		

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KAI MUSTONEN and KEIJO LAHETKANGAS

Appeal 2009-006322
Application 10/717,600¹
Technology Center 2400

Decided: May 26, 2010

Before JOSEPH F. RUGGIERO, MARC S. HOFF,
and BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The real party in interest is Nokia Corporation.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 22-46. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Pursuant to our authority under 37 C.F.R. § 41.50(b), we enter a new ground of rejection under 35 U.S.C. § 101.

Appellants' invention relates to a method of generating a unique internet protocol (IP) address wherein the geographical location information for the device to which the IP address is assigned is placed in the suffix portion of the IP address (Abstract).

Claims 22 and 44 are exemplary:

22. A method comprising:
generating a unique internet protocol address from the [sic]
geographical location data,²
wherein the internet protocol address has a global prefix portion and a local suffix portion, and
wherein the geographical location information is coded in the suffix portion of the address.
44. A unique internet protocol address embodied on a computer-readable medium comprising:
a global prefix portion and a local suffix portion,
wherein the unique internet protocol address is generated from geographical location data of one of a node and a router connected to said node, and
wherein said geographical location information is coded in said suffix portion of said unique internet protocol address.

² As this is the first recitation of the term "geographical location data," we understand the limitation to intend to read "generating a unique internet protocol address from geographical location data," without the article, "the."

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Orsic	US 6,147,986	Nov. 14, 2000
Dobbins	US 6,249,820	Jun. 19, 2001
Tiuri	US 6,829,230 B1	Dec. 7, 2004
Bialk	US 6,952,729 B2	Oct. 4, 2005

Claim 44 stands rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

Claims 22-25, 28-36, and 39-46 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tiuri.³

Claims 26 and 37 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tiuri in view of Dobbins and Bialk.

Claims 27 and 38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tiuri in view of Orsic.

ISSUES

I.

The Examiner rejects claim 44 as being directed to nonstatutory subject matter. Specifically, the Examiner finds that the claim recites an IP address, and an IP address is a data structure consisting of an arrangement of

³ The Examiner initially states that claims 22-25, 28-36, and 39-43 stand rejected as obvious over Tiuri (Ans. 4). However, the body of the rejection (Ans. 7-10) reasonably indicates that claims 44-46 are intended to be included within the statement of rejection as well.

bytes that identifies the address of a device (Ans. 3).⁴ The Examiner concludes that further putting the data structure on a computer-readable medium does not make the claim statutory since the IP address only defines an address of a device, and therefore cannot produce any useful result (Ans. 3; 12-13).

Appellants contend that the claimed internet protocol address, when embodied on a computer medium, constitutes “functional descriptive material” that provides a useful and tangible result” (App. Br. 32). Appellants also cite to *In re Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994), *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994), and MPEP § 2106.01 to support their arguments that claim 44 is directed to statutory subject matter (App.Br. 29-33; Reply Br. 5-7).

The first issue before us, then, is: Is claim 44, which recites an internet protocol address embodied on a computer-readable medium, directed to patent eligible subject matter?

II.

Regarding the obviousness rejection, the Examiner finds that it would have been obvious to one having ordinary skill in the art at the time the invention was made to code the geographical information into suffix part of the IP address by rearranging the geographical information from prefix to suffix (Ans. 4). The Examiner finds that it has been held that rearranging

⁴ Rather than repeat the Examiner’s positions and Appellants’ arguments in their entirety, we refer to the following documents for their respective details: Appeal Brief (filed April 15, 2008), the Reply Brief (filed June 10, 2008), and the Examiner’s Answer (mailed May 14, 2008).

parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70, 181 F.2d 1019 (CCPA 1950) (Ans. 4).

Appellants contend that the Examiner's findings are conclusory and insufficient to support a rejection under § 103 because the facts of *In re Japikse* differ from the facts of the present case (App. Br. 8). Appellants contend that placing the geographical location information in the suffix portion of an internet protocol address as opposed to the prefix portion fundamentally modifies how embodiments of the present invention operate (App. Br. 9-10)

The second issue before us is: Is rearranging the inclusion of geographical location information from the prefix to the suffix portion of an IP address a nonobvious modification of the operation of a computer to which the IP address is assigned, or is it merely an obvious rearrangement of parts involving only routine skill in the art?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, the invention relates to a method of generating a unique internet protocol (IP) address wherein the geographical location information for the device to which the IP address is assigned is placed in the suffix portion of the IP address (Abstract).

2. The local area network (LAN) employing the IP addressing scheme as claimed includes a router RT connected to the Internet and a subnet including a group of clients, such as personal computers (NODE 1,

NODE 2, NODE 3, and NODE 4) and a PDA/mobile phone (MOB) (Fig.2, Spec. 8:36-9:6). Router RT routes data packets between the Internet and the subnet (Spec. 8:36-9:6). The data packets include the IP address of the client or node to which the packet is destined to be routed (Spec. 2:4-9).

PRINCIPLES OF LAW

Under § 101, there are four categories of subject matter that are eligible for patent protection: (1) processes; (2) machines; (3) manufactures; and (4) compositions of matter. 35 U.S.C. § 101. But even if a claim fits within one or more of the statutory categories, it may not be patent eligible. *In re Ferguson*, 558 F.3d 1359, 1363 (Fed. Cir. 2009).

“[A]n applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article” into a different state or thing. *In re Bilski*, 545 F.3d 943, 961 (Fed. Cir. 2008) (en banc), *cert. granted*, 129 S. Ct. 2735 (2009); *see also Gottschalk v. Benson*, 409 U.S. 63, 70 (1972).

“[A] machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.” *Ferguson*, 558 F.3d at 1364 (quoting *In re Nuijten*, 500 F.3d 1346, 1355 (Fed. Cir. 2007), *reh’g denied en banc*, 515 F.3d 1361 (Fed. Cir. 2008), and *cert. denied*, 129 S. Ct. 70 (2008)).

Laws of nature, physical phenomena, and abstract ideas are excluded from patent protection. *Diamond v. Diehr*, 450 U.S. 175, 185 (1981).

“[T]he Court has held that a claim is not a patent-eligible ‘process’ if it claims ‘laws of nature, natural phenomena, [or] abstract ideas.’” *Diamond*

v. Diehr, 450 U.S. 175, 185 (1981) (citing *Flook*, 437 U.S. at 589, and *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Such fundamental principles [as "laws of nature, natural phenomena, and abstract ideas"] are "part of the storehouse of knowledge of all men . . . free to all men and reserved exclusively to none." *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948); *see also Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right."). "Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).

The test for statutory subject matter is whether the claimed subject matter is directed to a "practical application," i.e., whether it "transforms" an article or physical object to a different state or thing.

The Court in *Diehr* drew a distinction between those claims that "seek to pre-empt the use of" a fundamental principle and those claims that seek only to foreclose others from using a particular application of that fundamental principle. *Diamond v. Diehr*, 450 U. S. at 187. The Court in *Bilski* concluded that a court must make an inquiry into the scope of the exclusion of the patent claim, i.e. "whether the effect of allowing the claim would be to allow the patentee to pre-empt substantially all uses of the fundamental principle." *Bilski*, 545 F.3d at 952.

One may not patent a process that comprises every "substantial practical application" of an abstract idea, because such a patent "in practical effect would be a patent on the [abstract idea] itself." *Gottschalk v Benson*,

409 U.S. at 71-72 (1972). If so, the claim is not drawn to patent-eligible subject matter.

On the issue of obviousness, the Supreme Court has stated that “the obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). Further, the Court stated “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 419-420.

The determination of obviousness must consider, *inter alia*, whether a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so. *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000).

ANALYSIS

Section 101 rejection of Claim 44

The issue as framed by Appellants – whether embodying an internet protocol address on a computer readable medium causes the address to constitute functional descriptive material – is not dispositive as to whether claim 44 is directed to patent eligible subject matter. Accordingly, we need not resolve this question. Rather, we find that claim 44 is directed to patent ineligible subject matter for other reasons.

The preamble of claim 44 recites, “a unique internet protocol address embodied on a computer-readable medium.” Claim 44, then, constitutes an “apparatus” under 35 U.S.C. § 101 because the claim sets forth a physical structure: a computer readable medium which is encoded with an address. However, this is not the end of the inquiry. We must further determine whether the claim is wholly directed to a fundamental principle that has been judicially recognized as being an exception to patent eligible subject matter. *See In re Bilski*, 545 F.3d 943, 952-53 (Fed. Cir. 2008) (noting that claims drawn to only fundamental principles, such as laws of nature, natural phenomena, and abstract ideas, are not patent eligible subject matter).

Claim 44 states that the unique internet protocol address comprises “a global prefix portion and a local suffix portion.” Claim 44, then, recites a character string that is at least two characters in length: at least one character constituting the claimed “prefix portion” and at least one character constituting the “suffix portion.” A character string is an abstract idea, though, and abstract ideas *per se* are not patent eligible subject matter (*see Bilski*, 545 F.3d at 952 fn. 5). We must therefore further determine whether claim 44 pre-empts all uses of character strings (*id.* at 952-53).

The remaining two limitations of claim 44 are further directed towards the method by which the coding for the suffix portion of the address is generated: “from geographical location data of one of a node and a router connected to the node.” However, claim 44 does not positively recite either router or the node. More significant, claim 44 does not positively recite any computer components that read the internet protocol address or that perform any function based upon the content of the internet protocol address. As such, the only structure recited by claim 44 is a computer readable medium

that is encoded with a character string. The rest of the claim language being directed to (1) the method or procedure by which the characters of the character string are derived and (2) what the characters are subjectively intended to represent.

If claim 44 were to issue as a patent, then, the claim would cover all computer readable media that are encoded with character strings of any length. The only computer readable media that would not fall within the claim scope would be those that are either media encoded solely with a single character or those that are not encoded with any characters at all. As such, claim 44 would pre-empt essentially all uses of character strings on computer readable media. Effectively then, claim 44 would pre-empt all uses of computer readable media.

We therefore find that the claimed data structure embodied on a computer-readable medium is directed to patent ineligible subject matter. Accordingly, we sustain the Examiner's rejection of claim 44 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

Claims 22-25, 28-36 and 39-46

The Examiner finds that Tiuri discloses generating a unique IP address from the geographical location data, wherein the IP address has the geographical location data encoded in the prefix part of the address (Ans. 4). The Examiner concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to code the geographical information into suffix part of the IP address by rearranging the geographical information from prefix to suffix (Ans. 4). The Examiner relies on the fact that it has been held that rearranging parts of an invention

involves only routine skill in the art. *In re Japikse*, 86 USPQ 70, 181 F.2d 1019 (CCPA 1950) (Ans. 4).

Appellants contend that the Examiner's reason for his legal conclusion of obviousness is conclusory and insufficient to support a rejection under 35 U.S.C. § 103 (App. Br. 6-15). Appellants contend that the Examiner misapplied the holding of *In re Japikse* to their claimed invention since coding the geographical location information in the suffix portion of an internet protocol address as opposed to the prefix portion *fundamentally modifies how embodiments of the present invention operate*: (1) coding the geographical location information in the suffix portion assists in guarantying a truly unique internet protocol address; and (2) coding the geographical location information in the suffix portion provides for dynamically generating an IP address for a roaming mobile terminal without requiring an associated router to change its address (App. Br. 10).

The court in *Japikse* held that rearranging the starting switch of a hydraulic power press *would not modify the operation of the device* and, hence, only required ordinary skill in the art, making the rearrangement "routine" and not novel. *In re Japikse*, 181 F.2d 1019 (claims to a hydraulic power press that read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device).

When the facts in a prior legal decision are sufficiently similar, the rationale of the court may be used to demonstrate a common practice which the court has held normally requires only ordinary or routine skill in the art. However, if the Appellants have demonstrated the criticality of a specific limitation, it is not appropriate to solely rely on case law as the rationale to

support an obviousness rejection. *In re Eli Lilly & Co.*, 902 F.2d 943 (Fed. Cir. 1990). Specifically, Appellants contend that the facts of *In re Japikse* differ substantially from the facts of the present case (App. Br. 8), and Appellants have shown the criticality of placing the geographical location information in the suffix rather than in the prefix (App. Br. 10).

Appellants' reasoning (App. Br. 9-12) persuades us that repositioning the geographic location information to be located in the suffix of the IP address will modify how the routing algorithms within the routers perform packet routing. Accordingly, the Examiner erred in relying on *In re Japikse* to reject the claims under 35 U.S.C. § 103.

Thus, we find error in the Examiner's rejection of claims 22-25, 28-36, and 39-46 under 35 U.S.C. § 103(a) as unpatentable over Tiuri, and we will not sustain the rejection.

Claims 26 and 37

As noted *supra*, we reversed the rejection of claim 22 from which claims 26 and 37 depend. We have reviewed Dobbins and Bialk (the additional reference applied by the Examiner to reject these claims) and find that the cited references do not teach the limitations deemed to be absent from Tiuri.

We therefore reverse the Examiner's rejection of claims 26 and 37 under 35 U.S.C. § 103, for the same reasons expressed with respect to the rejection of parent claim 22, *supra*.

Claims 27 and 38

As noted *supra*, we reversed the rejection of claim 22 from which claims 27 and 38 depend. We have reviewed Orsic (the additional reference

applied by the Examiner to reject these claims) and find that the cited reference does not teach the limitations deemed to be absent from Tiuri.

We therefore reverse the Examiner's rejection of claims 27 and 38 under 35 U.S.C. § 103, for the same reasons expressed with respect to the rejection of parent claim 22, *supra*.

New Grounds of Rejection of Claim 22

Pursuant to our authority under 37 C.F.R. § 41.50(b), we reject claim 22 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

We have reviewed the steps recited in method claim 22 and find that none of the steps tie the method to a particular machine or apparatus. We further find that the method of claim 22 does not transform an article into a different state or thing. Rather, claim 22 is drafted broadly enough to read exclusively on a series of mental steps: mentally recognizing some given geographical location information, mentally correlating some character or character string to this information, and mentally generating an address character string so as to incorporate the character or character string representing the geographical location information into the suffix portion of the address.

Because claim 22 fails *Bilski's* machine-or-transformation test (545 F.3d at 961), we conclude that claim 22 is directed to patent ineligible subject matter. Accordingly, we reject claim 22 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

Although we decline to reject every claim under our discretionary authority under 37 C.F.R. 41.50(b), we emphasize that our decision does not mean the remaining dependent claims are patentable. Rather, we merely

leave the patentability determination of the remaining claims to the Examiner. *See* MPEP § 1213.02.

New Grounds of Rejection of Claim 43

Pursuant to our authority under 37 C.F.R. § 41.50(b), we reject claim 22 under 35 U.S.C. § 112, ¶ as being non-enabled for undue breadth.

Claim 43 recites:

43. An apparatus comprising:

routing means for routing internet protocol packets in which a unique address is based on geographical location information and has a global prefix portion and a local suffix portion,

wherein the apparatus is configured to harness the geographic location information coded to the suffix portion of the address in routing packets to destination nodes located in a subnetwork.

The first limitation of claim 43 recites “routing means for. . .,” thereby invoking 35 U.S.C. § 112, ¶ 6. The second limitation merely recites the claimed apparatus’ intended function or field of use. As such, claim 43 is a “single means” claim: “a claim drafted in ‘means-plus-function’ format yet reciting only a single element instead of a combination” (*see In re Hyatt*, 708 F.2d 712 (Fed Circ. 1983)). We therefore reject claim 43 as non-enabled for undue breadth under 35 U.S.C. 112, ¶ 1. *See Hyatt*, at 714-15 (holding that single means claims are subject to rejection under 35 U.S.C. § 112, ¶ 1 for insufficient disclosure because the claim “covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known to the inventor”).

CONCLUSIONS OF LAW

Claim 44 is directed to patent ineligible subject matter because the claim recites the abstract idea of a multi-character character string and pre-empts essentially all uses of a particular abstract idea – a character string – that is embodied on a computer readable media.

Rearranging the inclusion of geographical location information from the prefix to the suffix portion of an IP address is a nonobvious modification of the operation of a computer to which the IP address is assigned.

Method claim 22 is directed to patent ineligible subject matter because it fails *Bilski's* machine-or-transformation test.

Claim 43 recites a single means claim and is therefore non-enabled for undue breadth under 35 U.S.C. 112, ¶ 1.

ORDER

The Examiner's decision rejecting claim 44 under 35 U.S.C. § 101 is affirmed.

The Examiner's decision rejecting claims 22-46 under 35 U.S.C. § 103 is reversed.

Pursuant to our authority under 37 C.F.R. § 41.50(b), we reject claim 22 under 35 U.S.C. § 101.

Pursuant to our authority under 37 C.F.R. § 41.50(b), we reject claim 43 under 35 U.S.C. § 112, ¶ 1.

FINALITY

37 C.F.R. § 41.50(b) provides that, “[a] new grounds of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellants, *WITHIN TWO MONTHS FROM THE DATE OF THE DECISION*, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of proceedings (37 C.F.R. § 1.197 (b)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner ...

(2) Request that the proceeding be reheard under 37 C.F.R. § 41.52 by the Board upon the same record ...

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.1.36(a).

AFFIRMED IN PART

37 C.F.R. § 41.50(b)

ELD

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